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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,902	03/26/2004	Makoto Miyamoto	YMOR:197A	7694

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STEPTOE & JOHNSON LLP
1330 CONNECTICUT AVENUE, N.W.
WASHINGTON, DC 20036

EXAMINER

WATKO, JULIE ANNE

ART UNIT	PAPER NUMBER
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2653

DATE MAILED: 07/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/809,902

Applicant(s)

MIYAMOTO ET AL.

Examiner

Julie Anne Watko

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-6 and 8-13 is/are pending in the application.
- 4a) Of the above claim(s) 8-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/815,276.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. On page 7, 3rd paragraph, Applicant asserts that “the present application claims priority to Japanese patent application No. 2000-085487, filed March 27, 2000. A verified translation of JP 2000-085487 is filed herewith.” These assertions are both incorrect. The instant application claims priority to Japanese patent application 2000-085479, and Applicant has filed a certified translation of Japanese patent application 2000-085479.

2. Because Applicant’s arguments after final with respect to foreign priority have been fully considered and would have been persuasive had Applicant properly identified the Japanese application for the foreign priority claim, the final rejection of April 26, 2005, has been overcome and is withdrawn.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 2-3 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell (US Pat. No. 4692829) in view of Reinhart (US Pat. No. 5734527) and Mastache (US Pat. No. 5528437).

As recited in claim 2, Campbell shows a disk drive system comprising: an actuator 24 having a head arm mounted with a slider 22 having a head element for recording data in a disk 18 recording medium and reading the recorded data; an inertial arm 32 rotatably supported for engaging said actuator when said head arm is in or near a parking position (see LZ in Fig. 1) and releasing the engagement with said actuator when said head arm is in or near a position (see DT

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in Fig. 1) close to a disk recording medium; and energizing means 34 for holding a position of said inertial arm in a position where the engagement with said actuator is released.

As recited in claim 2, Campbell is silent regarding means for unloading said head arm to a parking position and loading said head arm from said parking position such that said slider comes close to a surface of a disk recording medium, wherein said actuator and said inertial arm have balanced mass with respect to respective centers of rotation.

As recited in claim 2, Reinhart teaches that an unload device may be added to a disk drive system in order to remove heads entirely from the disk surface during parking, and that latches commonly are used to maintain a slider in a position where it is unloaded from the disk surface (see col. 2, lines 26-38), and that a parking zone on a disk decreases the data storage capacity (see col. 3, lines 24-26) because the parking zone does not contain data (see col. 7, lines 24-26). As recited in claim 2, Reinhart further teaches that a balanced arm of a latch member has greater shock performance (see col. 5, lines 8-17) than an unbalanced latch arm.

As recited in claim 2, Mastache teaches that a balanced rotary actuator is insensitive to linear shock in any direction (see col. 2, lines 3-5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add an unloading device to the disk drive system of Campbell as taught by Reinhart. The rationale is as follows: one of ordinary skill in the art would have been motivated to add the unloading device to the disk drive in order to increase data storage capacity by eliminating a parking zone and dedicating more disk space to data storage as taught by Reinhart, and to control break away torque by improving endurance of CSS cycles, and to prevent damage to the disk drive system during shipping as is notoriously well known in the art.

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It would have been further obvious to one of ordinary skill in the art at the time the invention was made to balance the inertial arm and the actuator of Campbell as taught by Reinhart and Mastache. The rationale is as follows: one of ordinary skill in the art would have been motivated to balance the inertial arm and the actuator in order to increase shock performance by rendering the inertial arm and the actuator insensitive to linear shock as taught by Reinhart and Mastache.

As recited in claim 3, Campbell shows an engaging part (see 52 and 54), wherein said actuator and said inertial arm have respective centers of rotation (26 and 42, respectively).

As recited in claim 3, Campbell is silent regarding whether a ratio of inertia of said actuator and said inertial arm is equal to a ratio of a distance from the center of rotation of said actuator to the engaging part and a distance from the center of rotation of said inertial arm to the engaging part.

As recited in claim 3, Mastache teaches that a ratio of inertial of an actuator 5 and an inertial arm 9a is equal to a ratio of a distance from a center of rotation 5d of said actuator to an engaging part (see 5e1) and a distance from the center of rotation 9a1 of said inertial arm to the engaging part (see col. 6, line 35, which discloses $I_B = I_A(L_1/L_2)$ wherein the I values are moments of inertia and the L values are distances from center of rotation to the engaging part).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the disk drive of Campbell with the ratios taught by Mastache. The rationale is as follows: one of ordinary skill in the art would have been motivated to make forces balance so that rotation is zero, such that without the addition of external control over the balanced rotary actuator latch and the use only of the forces resulting from rotary acceleration of

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the disk drive support caused by rotary shock, the rotary actuator arm assembly is retained in latched or parked position as taught by Mastache (see col. 6, lines 2-11).

Regarding claim 5: See teachings, rationale and motivation above for claim 2.

Regarding claim 6: See teachings, rationale and motivation above for claim 3.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell (US Pat. No. 4692829) in view of Reinhart (US Pat. No. 5734527).

As recited in claim 4, Campbell shows a disk drive system comprising: an actuator 24 having a head arm mounted with a slider 22 having a head element for recording data in a disk 18 recording medium and reading the recorded data; an inertial arm 32 rotatably supported for engaging said actuator when said head arm is in or near said parking position (see LZ), and for releasing engagement with said actuator when said head arm is in or near a position (see DT) close to a disk recording medium, and having a wind receiver 34 for receiving a force of air flow produced by rotation of a disk recording medium 18, the wind receiver oriented for replying such force to the inertial arm in a direction away from engagement with the actuator for maintaining (insofar as the released state persists until a power down sequence, see col. 5, lines 47-49, "airflow becomes insufficient to deflect the airvane portion 34 during the power down sequence") the inertial arm in a released state.

As recited in claim 4, Campbell is silent regarding means for unloading said head arm to a parking position and loading said head arm from said parking position such that said slider comes close to a surface of a disk recording medium.

See teachings, rationale and motivation above for claim 2.

Response to Arguments

6. Applicant's arguments with respect to claims 2-6 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jabbari (US Pat. No. 6430007 B1) teaches that "Break away torque is also affected by environmental conditions, the number of crash stop/start (CSS) cycles performed, and time. As the requirements for enduring CSS cycles increase, load-unload mechanisms for disk drives, such as ramps, are becoming more popular. Load/unload mechanisms reduce concerns of head media interaction during take-off and landing, and damage to the unit during shipping and/or handling" (see col. 1, lines 17-25).

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

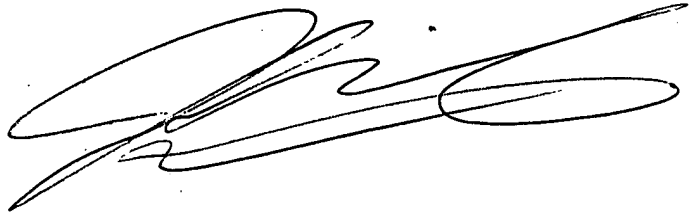
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Anne Watko whose telephone number is (571) 272-7597. The examiner can normally be reached on Tue & Thu until 5, Wed until 3:30, Mon & Fri late.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Julie Anne Watko
Primary Examiner
Art Unit 2653

July 27, 2005
JAW

A handwritten signature in black ink, appearing to read 'Julie Anne Watko', with a large, stylized flourish at the end.